

Massimiliano Ferronato

List of Publications by Year in descending order

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100
papers

1,828
citations

279798

23
h-index

330143

37
g-index

104
all docs

104
docs citations

104
times ranked

976
citing authors

#	ARTICLE	IF	CITATIONS
1	A fully coupled 3-D mixed finite element model of Biot consolidation. Journal of Computational Physics, 2010, 229, 4813-4830.	3.8	157
2	Importance of poroelastic coupling in dynamically active aquifers of the Po River Basin, Italy. Water Resources Research, 2000, 36, 2443-2459.	4.2	91
3	Land uplift due to subsurface fluid injection. Journal of Geodynamics, 2011, 51, 1-16.	1.6	80
4	Geomechanical issues of anthropogenic CO2 sequestration in exploited gas fields. Energy Conversion and Management, 2010, 51, 1918-1928.	9.2	69
5	Numerical modelling of regional faults in land subsidence prediction above gas/oil reservoirs. International Journal for Numerical and Analytical Methods in Geomechanics, 2008, 32, 633-657.	3.3	59
6	Scalable algorithms for three-field mixed finite element coupled poromechanics. Journal of Computational Physics, 2016, 327, 894-918.	3.8	55
7	Finite element analysis of land subsidence above depleted reservoirs with pore pressure gradient and total stress formulations. International Journal for Numerical and Analytical Methods in Geomechanics, 2001, 25, 307-327.	3.3	52
8	Ill-conditioning of finite element poroelasticity equations. International Journal of Solids and Structures, 2001, 38, 5995-6014.	2.7	51
9	A Block FSAI-ILU Parallel Preconditioner for Symmetric Positive Definite Linear Systems. SIAM Journal of Scientific Computing, 2010, 32, 2468-2484.	2.8	48
10	Adaptive Pattern Research for Block FSAI Preconditioning. SIAM Journal of Scientific Computing, 2011, 33, 3357-3380.	2.8	44
11	Novel preconditioners for the iterative solution to FE-discretized coupled consolidation equations. Computer Methods in Applied Mechanics and Engineering, 2007, 196, 2647-2656.	6.6	41
12	Mixed Constraint Preconditioners for the iterative solution of FE coupled consolidation equations. Journal of Computational Physics, 2008, 227, 9885-9897.	3.8	36
13	FSAIPACK. ACM Transactions on Mathematical Software, 2015, 41, 1-26.	2.9	36
14	Interpretation of Radioactive Marker Measurements To Evaluate Compaction in the Northern Adriatic Gas Fields. SPE Reservoir Evaluation and Engineering, 2003, 6, 401-411.	1.8	35
15	Mixed constraint preconditioning in computational contact mechanics. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 3922-3931.	6.6	35
16	Saving Venice by seawater. Journal of Geophysical Research, 2004, 109, .	3.3	31
17	Stochastic poromechanical modeling of anthropogenic land subsidence. International Journal of Solids and Structures, 2006, 43, 3324-3336.	2.7	31
18	A geomechanical transversely isotropic model of the Po River basin using PSInSAR derived horizontal displacement. International Journal of Rock Mechanics and Minings Sciences, 2012, 51, 105-118.	5.8	30

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19	A novel Lagrangian approach for the stable numerical simulation of fault and fracture mechanics. <i>Journal of Computational Physics</i> , 2016, 314, 503-521.	3.8	30
20	The 3D Facies and Geomechanical Modeling of Land Subsidence in the Chaobai Plain, Beijing. <i>Water Resources Research</i> , 2020, 56, e2019WR027026.	4.2	28
21	A comparison of numerical integration rules for the meshless local Petrov-Galerkin method. <i>Numerical Algorithms</i> , 2007, 45, 61-74.	1.9	27
22	Data assimilation of surface displacements to improve geomechanical parameters of gas storage reservoirs. <i>Journal of Geophysical Research: Solid Earth</i> , 2016, 121, 1441-1461.	3.4	27
23	A generalized Block FSAI preconditioner for nonsymmetric linear systems. <i>Journal of Computational and Applied Mathematics</i> , 2014, 256, 230-241.	2.0	26
24	Numerical performance of projection methods in finite element consolidation models. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2001, 25, 1429-1447.	3.3	25
25	Ensemble smoothing of land subsidence measurements for reservoir geomechanical characterization. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2015, 39, 207-228.	3.3	24
26	II cycle compressibility from satellite measurements. <i>Geotechnique</i> , 2013, 63, 479-486.	4.0	22
27	A general preconditioning framework for coupled multiphysics problems with application to contact and poro-mechanics. <i>Journal of Computational Physics</i> , 2019, 398, 108887.	3.8	22
28	A meshless method for axi-symmetric poroelastic simulations: numerical study. <i>International Journal for Numerical Methods in Engineering</i> , 2007, 70, 1346-1365.	2.8	21
29	The role of preconditioning in the solution to FE coupled consolidation equations by Krylov subspace methods. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2009, 33, 405-423.	3.3	21
30	Parallel solution to ill-conditioned FE geomechanical problems. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2012, 36, 422-437.	3.3	21
31	Block preconditioning for fault/fracture mechanics saddle-point problems. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2019, 344, 376-401.	6.6	21
32	Preconditioning for Sparse Linear Systems at the Dawn of the 21st Century: History, Current Developments, and Future Perspectives. <i>ISRN Applied Mathematics</i> , 2012, 2012, 1-49.	0.5	20
33	Enhanced Block FSAI Preconditioning Using Domain Decomposition Techniques. <i>SIAM Journal of Scientific Computing</i> , 2013, 35, S229-S249.	2.8	19
34	Hydrogeological effects of dredging navigable canals through lagoon shallows. A case study in Venice. <i>Hydrology and Earth System Sciences</i> , 2017, 21, 5627-5646.	4.9	19
35	Land Subsidence Spreading Factor of the Northern Adriatic Gas Fields, Italy. <i>International Journal of Geomechanics</i> , 2001, 1, 459-475.	2.7	18
36	Radioactive Marker Measurements in Heterogeneous Reservoirs: Numerical Study. <i>International Journal of Geomechanics</i> , 2004, 4, 79-92.	2.7	18

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37	Fluid-Dynamic and Geomechanical Effects of CO2 Sequestration below the Venice Lagoon. Environmental and Engineering Geoscience, 2006, 12, 211-226.	0.9	18
38	Surface Flow Boundary Conditions in Modeling Land Subsidence Due to Fluid Withdrawal. Ground Water, 2004, 42, 516-525.	1.3	17
39	Land surface uplift above compacting overconsolidated reservoirs. International Journal of Solids and Structures, 2001, 38, 8155-8169.	2.7	16
40	A stabilized element-based finite volume method for poroelastic problems. Journal of Computational Physics, 2018, 364, 49-72.	3.8	16
41	Efficient solvers for hybridized three-field mixed finite element coupled poromechanics. Computers and Mathematics With Applications, 2021, 91, 36-52.	2.7	15
42	Scaling improves stability of preconditioned CG-like solvers for FE consolidation equations. International Journal for Numerical and Analytical Methods in Geomechanics, 2003, 27, 1043-1056.	3.3	14
43	The effect of graph partitioning techniques on parallel Block FSAI preconditioning: a computational study. Numerical Algorithms, 2015, 68, 813-836.	1.9	14
44	Formation compaction vs land subsidence to constrain rock compressibility of hydrocarbon reservoirs. Geomechanics for Energy and the Environment, 2018, 13, 14-24.	2.5	14
45	Direct, partitioned and projected solution to finite element consolidation models. International Journal for Numerical and Analytical Methods in Geomechanics, 2002, 26, 1371-1383.	3.3	13
46	Can CO2 help save Venice from the Sea?. Eos, 2003, 84, 546.	0.1	13
47	The Use of Supernodes in Factored Sparse Approximate Inverse Preconditioning. SIAM Journal of Scientific Computing, 2015, 37, C72-C94.	2.8	13
48	Robust numerical implementation of a 3D rate-dependent model for reservoir geomechanical simulations. International Journal for Numerical and Analytical Methods in Geomechanics, 2019, 43, 2752-2771.	3.3	13
49	Multi-level incomplete factorizations for the iterative solution of non-linear finite element problems. International Journal for Numerical Methods in Engineering, 2009, 80, 651-670.	2.8	12
50	Can natural fluid pore pressure be safely exceeded in storing gas underground?. Engineering Geology, 2013, 153, 35-44.	6.3	12
51	A Relaxed Physical Factorization Preconditioner for Mixed Finite Element Coupled Poromechanics. SIAM Journal of Scientific Computing, 2019, 41, B694-B720.	2.8	12
52	A novel block non-symmetric preconditioner for mixed-hybrid finite-element-based Darcy flow simulations. Journal of Computational Physics, 2021, 442, 110513.	3.8	12
53	Parallel inexact constraint preconditioning for ill-conditioned consolidation problems. Computational Geosciences, 2012, 16, 661-675.	2.4	11
54	A reduced order model-based preconditioner for the efficient solution of transient diffusion equations. International Journal for Numerical Methods in Engineering, 2017, 109, 1159-1179.	2.8	11

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55	Efficient parallel solution to large-size sparse eigenproblems with block FSAI preconditioning. Numerical Linear Algebra With Applications, 2012, 19, 797-815.	1.6	10
56	On the uniformity of anthropogenic Venice uplift. Terra Nova, 2009, 21, 467-473.	2.1	9
57	A Parametric Numerical Analysis of Factors Controlling Ground Ruptures Caused by Groundwater Pumping. Water Resources Research, 2019, 55, 9500-9518.	4.2	9
58	A novel methodological approach for land subsidence prediction through data assimilation techniques. Computational Geosciences, 2021, 25, 1731-1750.	2.4	9
59	On the role of reservoir geometry in waterdrive hydrodynamics. Journal of Petroleum Science and Engineering, 2004, 44, 205-221.	4.2	8
60	Numerical Modeling of Rock/Casing Interaction in Radioactive-Marker Boreholes of the Northern Adriatic Basin, Italy. SPE Reservoir Evaluation and Engineering, 2010, 13, 906-913.	1.8	8
61	Shifted FSAI preconditioners for the efficient parallel solution of non-linear groundwater flow models. International Journal for Numerical Methods in Engineering, 2012, 89, 1707-1719.	2.8	8
62	On the importance of the heterogeneity assumption in the characterization of reservoir geomechanical properties. Geophysical Journal International, 2016, 207, 47-58.	2.4	8
63	A Robust Multilevel Approximate Inverse Preconditioner for Symmetric Positive Definite Matrices. SIAM Journal on Matrix Analysis and Applications, 2018, 39, 123-147.	1.4	8
64	Approximate inverse-based block preconditioners in poroelasticity. Computational Geosciences, 2021, 25, 701-714.	2.4	8
65	Performance and robustness of block constraint preconditioners in finite element coupled consolidation problems. International Journal for Numerical Methods in Engineering, 2010, 81, 381-402.	2.8	7
66	Testing a data assimilation approach to reduce geomechanical uncertainties in modelling land subsidence. Environmental Geotechnics, 2016, 3, 386-396.	2.3	7
67	Generalized Polynomial Chaos Expansion for Fast and Accurate Uncertainty Quantification in Geomechanical Modelling. Algorithms, 2020, 13, 156.	2.1	7
68	A Pilot Project Using Seawater to Uplift Venice Anthropogenically. Eos, 2008, 89, 152-152.	0.1	6
69	Multilevel approaches for FSAI preconditioning. Numerical Linear Algebra With Applications, 2018, 25, e2183.	1.6	6
70	Modeling fault activation due to fluid production: Bayesian update by seismic data. Computational Geosciences, 2019, 23, 705-722.	2.4	5
71	Virtual element method for the numerical simulation of long-term dynamics of transitional environments. Journal of Computational Physics, 2020, 407, 109235.	3.8	4
72	On existence-uniqueness of the solution in a nonlinear Biot's model. Applied Mathematics and Information Sciences, 2013, 7, 333-341.	0.5	4

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73	Enhanced relaxed physical factorization preconditioner for coupled poromechanics. <i>Computers and Mathematics With Applications</i> , 2022, 106, 27-39.	2.7	4
74	A reverse augmented constraint preconditioner for Lagrange multiplier methods in contact mechanics. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022, 392, 114632.	6.6	4
75	Linear Solvers for Reservoir Simulation Problems: An Overview and Recent Developments. <i>Archives of Computational Methods in Engineering</i> , 2022, 29, 4341-4378.	10.2	4
76	Casing Influence in Reservoir Compaction Measurement by Radioactive Markers in the Northern Adriatic, Italy. <i>International Journal of Geomechanics</i> , 2007, 7, 444-447.	2.7	3
77	A Novel Factorized Sparse Approximate Inverse Preconditioner with Supernodes. <i>Procedia Computer Science</i> , 2015, 51, 266-275.	2.0	3
78	A block preconditioner for two-phase flow in porous media by mixed hybrid finite elements. <i>Computational and Mathematical Methods</i> , 2021, 3, e1207.	0.8	3
79	Reservoir compaction and land subsidence. <i>Revue Européenne De Géologie Civile</i> , 2006, 10, 731-762.	0.0	2
80	A Coupled Mixed Finite Element Biot Model for Land Subsidence Prediction in the Beijing Area. , 2017, , .		2
81	Enriching the finite element method with meshfree particles in structural mechanics. <i>International Journal for Numerical Methods in Engineering</i> , 2017, 110, 675-700.	2.8	2
82	A supernodal block factorized sparse approximate inverse for non-symmetric linear systems. <i>Numerical Algorithms</i> , 2018, 78, 333-354.	1.9	2
83	Finite Element Solution Coupled Consolidation Equations. , 2002, , 101-106.		2
84	Reservoir compaction and land subsidence. <i>Revue Européenne De Géologie Civile</i> , 2006, 10, 731-762.	0.0	2
85	A scalable preconditioning framework for stabilized contact mechanics with hydraulically active fractures. <i>Journal of Computational Physics</i> , 2022, 463, 111276.	3.8	2
86	Efficient scaling algorithms for projection solvers in the FE solution to coupled consolidation. <i>Developments in Water Science</i> , 2002, 47, 437-444.	0.1	1
87	Symmetric and Unsymmetric Block Preconditioning for the Iterative Solution to FE Coupled Consolidation. <i>AIP Conference Proceedings</i> , 2007, , .	0.4	1
88	Parallel Jacobi-Davidson with block FSAI preconditioning and controlled inner iterations. <i>Numerical Linear Algebra With Applications</i> , 2016, 23, 394-409.	1.6	1
89	Block Preconditioning for the FE Solution to Contact Problems. <i>AIP Conference Proceedings</i> , 2007, , .	0.4	0
90	Letter to the editor of <i>Petroleum Science & Engineering</i> : Comment on "Casing influence while measuring in situ reservoir compaction" by P. Macini, E. Mesini, V.A. Salomoni and B.A. Schrefler [J. Pet. Sci. Eng. 50 (2006), 40-54]. <i>Journal of Petroleum Science and Engineering</i> , 2008, 60, 67-70.	4.2	0

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91	Preconditioning Techniques for Sparse Linear Systems. Journal of Applied Mathematics, 2012, 2012, 1-3.	0.9	0
92	Generalizing block FSAI preconditioning to unsymmetric indefinite matrices. , 2012, , .		0
93	Enriching the Finite Element Method with meshfree techniques in structural mechanics. Proceedings in Applied Mathematics and Mechanics, 2015, 15, 691-692.	0.2	0
94	A Surrogate Model for Fast Land Subsidence Prediction and Uncertainty Quantification. Lecture Notes in Civil Engineering, 2021, , 943-950.	0.4	0
95	Integration of Data Assimilation Techniques in Geomechanical Modelling: Ensemble Smoother with Multiple Data Assimilation Analysis. Lecture Notes in Civil Engineering, 2021, , 862-869.	0.4	0
96	A Parallel Adaptive Block FSAI Preconditioner for Finite Element Geomechanical Models. Advances in Intelligent and Soft Computing, 2012, , 331-338.	0.2	0
97	An Oscillation-Free Finite Volume Method for Poroelasticity. Lecture Notes in Computational Science and Engineering, 2019, , 779-787.	0.3	0
98	Numerical simulation of land subsidence above an off-shore Adriatic hydrocarbon reservoir, Italy, by Data Assimilation techniques. Proceedings of the International Association of Hydrological Sciences, 0, 382, 449-455.	1.0	0
99	A New Software to Model Earth Fissure Caused by Extensive Aquifer Exploitation and its Application to the Guangming Village Case, China. Proceedings of the International Association of Hydrological Sciences, 0, 382, 511-514.	1.0	0
100	On the Development of Efficient Solvers for Real-World Coupled Hydromechanical Simulations. Frontiers in Mechanical Engineering, 2022, 8, .	1.8	0